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12/94

STS Consultants Ltd.
Consulting Engineers

1415 Lake Cook Road
Deerfield, IL 60015
(708) 272-6520

DATE: 12/ /94

FAX TRANSMITTAL COVER SHEET

PLEASE DELIVER THE FOLLOWING PAGES IMMEDIATELY TO:

NAME: VERNITA SIMON

COMPANY: USEPA

FAX NUMBER: (312) 353-9176

FROM:

NAME: STEVE NEWLIN

FAX NUMBER: (708) 498-2721 OR _____

TOTAL NUMBER OF PAGES (INCLUDING THIS COVER SHEET): 4

MESSAGE:

ATTACHED IS THE CERTIFICATION FOR THE WASTE WATER @ THE LINDSAY LIGHT II SITE.

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL (708) 272-6520.

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704
217/785-9900
217/782-6133 (TDD)

Jim Edgar
Governor

Thomas W. Ortciger
Director

December 6, 1994

Mr. Richard Berggreen
STS Consultants Ltd.
1415 Lake Cook Road
Deerfield, Illinois 60015

Dear Mr. Berggreen:

This letter is in response to correspondence from your office dated November 17, 1994 regarding disposal of waste water generated during your company's characterization of Thorium 232 contamination at 316 E. Illinois St. in Chicago, Illinois. Review of the MJW Corporations analytical results for samples of the waste water indicate gross alpha/beta activity to be at or below the minimum detectable activity (4.1 E-09 uCi/ml) for the counting system used. Although the water was not generated as part of an activity licensed by the Illinois Department of Nuclear Safety, analytical results confirm that the activity in the subject sample is well below the average monthly limit of 3.0 E-08 uCi/ml available for release to any sanitary sewer.

Based on the above information we concur that the water may be free released in any manner consistent with typical clean waste water disposal practices and the goals of the project. If you have questions regarding this correspondence please feel free to call me at (217) 786-6365.

Sincerely,

Timothy A. Runyon, Chief
Division of Environmental Monitoring

cc: Richard Allen, OES
Vernita Simon, USEPA

3) Monitor all packages known to contain radioactive material for radioactive contamination and radiation levels if there is evidence of degradation of package integrity, such as packages that are crushed, wet or damaged.

c) The licensee shall perform the monitoring required by subsection (b) above as soon as practicable after receipt of the package, but not later than 3 hours after the package is received at the licensee's facility if it is received during the licensee's normal working hours or if there is evidence of degradation of package integrity, such as a package that is crushed, wet or damaged. If a package is received after working hours, and has no evidence of degradation of package integrity, the package shall be monitored no later than 3 hours from the beginning of the next working day.

d) The licensee shall immediately notify the final delivery carrier and the Department, by telephone and either telegram, mailgram or facsimile, when:

1) Removable radioactive surface contamination exceeds the limits of 32 Ill. Adm. Code 341.150(h); or

2) External radiation levels exceed the limits of 32 Ill. Adm. Code 341.150(i) and (j).

e) Each licensee shall:

1) Establish, maintain and retain written procedures for safely opening packages in which radioactive material is received; and

2) Ensure that the procedures are followed and that special instructions for the type of package being opened are adhered to.

SUBPART K: WASTE DISPOSAL

Section 340.1010 General Requirements

a) A licensee shall dispose of licensed material only:

1) By transfer to an authorized recipient as provided in Section 340.1060 or in 32 Ill. Adm. Code 330, 332 or 601, or to the U.S. Department of Energy; or

2) By release in effluents within the limits in Section 340.310; or

3) As authorized pursuant to Sections 340.1020, 340.1030, 340.1040 or 340.1050.

b) A person shall be specifically licensed by the Department prior to receiving waste containing licensed material from any other point of generation for:

1) Treatment prior to disposal; or

2) Treatment or disposal by incineration; or

3) Disposal at a land disposal facility licensed pursuant to 32 Ill. Adm. Code 601; or

4) Storage until transferred to a disposal facility authorized to receive the waste.

Section 340.1020 Method for Obtaining Approval of Proposed Disposal Procedures

A licensee or applicant for a license may apply to the Department for approval of proposed procedures, not otherwise authorized in 32 Ill. Adm. Code: Chapter II. Subchapters b and d, to dispose of licensed material generated in the licensee's operations. Each application shall include:

a) A description of the waste containing licensed material to be disposed of, including the physical and chemical properties that have an impact on risk evaluation, and the proposed manner and conditions of waste disposal;

b) An analysis and evaluation of pertinent information on the nature of the environment;

c) The nature and location of other potentially affected facilities; and

d) Analyses and procedures to ensure that doses are maintained ALARA and within the dose limits in this Part.

Section 340.1030 Disposal by Release into Sanitary Sewerage

a) A licensee may discharge licensed material into sanitary sewerage if each of the following conditions is satisfied:

1) The material is readily soluble, or is readily dispersible biological material, in water;

2) The quantity of licensed radioactive material that the licensee releases into the sewer in 1 month divided by the average monthly volume of water released into the sewer by the licensee does not exceed the concentration listed in Table 3 of Appendix B to 10 CFR 20.1001 - 20.2401, effective January 1, 1994, exclusive of subsequent amendments or editions;

3) If more than one radionuclide is released, the following conditions must also be satisfied:

A) The licensee shall determine the fraction of the limit in Table 3 of Appendix B to 10 CFR 20.1001 - 20.2401, effective January 1, 1994, exclusive of subsequent amendments or editions, represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee into the sewer by the concentration of that radionuclide listed in Table 3 of Appendix B to 10 CFR 20.1001 - 20.2401, effective January 1, 1994, exclusive of subsequent amendments or editions; and

B) The sum of the fractions for each radionuclide required by subsection (a)(3)(A) above does not exceed unity;

Atomic No.	Radionuclide	Class	Table 1 Occupational Values Col. 1 Oral Ingestion ALI (μCi)	Col. 2 Inhalation ALI (μCi)	Col. 3 Inhalation DAC (μCi/ml)	Table 2 Effluent Concentrations Col. 1 Air (μCi/ml)	Col. 2 Water (μCi/ml)	Table 3 Releases to Sewers Monthly Average Concentration (μCi/ml)
89	Actinium-224	D, see ^{224}Ac	2E-3	9E-0	4E-9	-	3E-5	3E-4
			-	Bone surf (2E-1)	-	2E-11	-	-
		W, see ^{224}Ac	-	4E-1	2E-8	-	-	-
			-	Bone surf (6E-1)	-	8E-11	-	-
		Y, see ^{224}Ac	-	4E-1	2E-8	6E-11	-	-
90	Thorium-226[2]	W, all compounds except those given for Y	5E-3 St. wall (5E-9)	2E-2	6E-8	3E-10	-	-
				-	-	-	7E-5	7E-4
		Y, oxides and hydroxides	-	1E-2	6E-8	2E-10	-	-
90	Thorium-227	W, see ^{226}Th	1E-2	3E-1	1E-10	5E-13	2E-6	2E-5
		Y, see ^{226}Th	-	3E-1	1E-10	5E-13	-	-
90	Thorium-228	W, see ^{226}Th	6E-0	1E-2	4E-12	-	-	-
			Bone surf (1E-1)	Bone surf (2E-2)	-	3E-14	2E-7	2E-6
		Y, see ^{226}Th	-	2E-2	7E-12	2E-14	-	-
90	Thorium-229	W, see ^{226}Th	6E-1	9E-4	4E-13	-	-	-
			Bone surf (1E-0)	Bone surf (2E-3)	-	3E-16	2E-8	2E-7
		Y, see ^{226}Th	-	2E-3	1E-12	-	-	-
			-	Bone surf (3E-3)	-	4E-15	-	-
90	Thorium-230	W, see ^{226}Th	6E-0	6E-3	3E-12	-	-	-
			Bone surf (9E-0)	Bone surf (2E-2)	-	2E-14	1E-7	1E-6
		Y, see ^{226}Th	-	2E-2	6E-12	-	-	-
			-	Bone surf (2E-2)	-	3E-14	-	-
90	Thorium-231	W, see ^{226}Th	4E-1	6E-3	3E-6	8E-9	5E-5	5E-4
		Y, see ^{226}Th	-	6E-3	3E-6	9E-9	-	-
90	Thorium-232	W, see ^{226}Th	7E-2	1E-3	5E-13	-	-	-
			Bone surf (2E-0)	Bone surf (3E-3)	-	4E-16	3E-8	3E-7
		Y, see ^{226}Th	-	3E-3	1E-12	-	-	-
			-	Bone surf (4E-3)	-	6E-15	-	-
90	Thorium-234	W, see ^{226}Th	3E-2	2E-2	8E-8	3E-10	-	-
			LLI wall (4E-2)	-	-	-	5E-6	5E-5
		Y, see ^{226}Th	-	2E-2	6E-8	2E-10	-	-
91	Protactinium-227[2]	W, all compounds except those given for Y	4E-3	1E-2	5E-8	2E-10	5E-5	5E-4
		Y, oxides and hydroxides	-	1E-2	4E-8	1E-10	-	-
91	Protactinium-228	W, see ^{227}Pa	1E-3	1E-1	5E-9	-	2E-5	2E-4
			-	Bone surf (2E-1)	-	3E-11	-	-
		Y, see ^{227}Pa	-	1E-1	5E-8	2E-11	-	-